

Agri. Res. J. Kerala, 1977. 15 (2)

OCCURRENCE OF RICE YELLOW DWARF IN KERALA

The paddy crop in most of the fields in Kerala had been affected by an unidentified viral disease since 1973. The virippu crop 1976 was also seen affected to the extent of 5-10 per cent by this disease. It is becoming wide spread and serious in the paddy fields of Kerala.

In the fields the plants were seen severely stunted and chlorotic. The chlorotic leaves were uniformly pale green to pale yellow. The discoloration first appeared on the newly emerging young leaves and all the succeeding leaves showed chlorosis. The plants produced excessive tillers. The diseased plants generally did not produce any panicle. Rarely a few unfilled panicles emerged from the diseased plants.

Transmission studies were carried out at the Rice Research Station Pattambi using diseased plants with typical symptoms collected from the farm. Since the disease was suspected to be grassy stunt or yellow dwarf, two types of plant hoppers prevalent in the field during the season, the brown hopper *Nilaparvata lugens* (Stal.) and the green hopper *Nephotettix virescens* (Distant) were used for the transmission studies. For acquisition feeding both types of insects were separately confined to the diseased plants using cellulplastic tube made of cellulose-butyrate (cellulplastic Inc; New York, U.S.A.) 16 inch long and 2 inch in diameter. The brown plant hopper nymphs were used for inoculation 11 days after acquisition feeding. Starting from the 11th day five hoppers were transferred to fresh set of 10 day old healthy Jaya seedlings, every day until the 15th day and kept in insect proof cages for the development of symptoms. In the case of green plant hopper after 20 days acquisition feeding the insects were used for inoculation. Five hoppers were transferred to fresh set of 10 day old seedlings every day until the 25th day and kept in insect-proof cages for symptom development. Transferring of hoppers were done carefully to individual plants, using an aspirator and confined it using celiuplastic tubes 8 inch long and 1 inch in diameter. The brown hopper fed plants did not produce any symptom even after fifty days but at the same time green hopper produced the symptoms within thirty days after inoculation in seventy per cent of plants. The incubation period ranged 26—30 days.

Symptoms and transmission studies clearly indicate that this disease is identical with the *yellow dwarf virus* reported by Ray Chaudhuri et al. (1967) in India. The present study indicate the presence of yellow dwarf disease in Kerala.

So it seems that all the three viruses tungro, grassy stunt, and yellow dwarf are present in Kerala which demand efforts to work on the epidemiology and the control of these viruses.

The authors express their sincere thanks to the Director of Research and Rice Specialist, for their interest and encouragement,

സംഗ്രഹം

പട്ടാമ്പിനെല്ലു ഗവേഷണകേന്ദ്രത്തിൽ നെൽചെടിയുടെ വൈറസ് രോഗങ്ങളെപ്പറ്റി നടത്തിയ പഠനത്തിൽനിന്നും “യെല്ലോഡ്വാർഫ്” എന്ന വൈറസ് രോഗം കേരളത്തിലെ നെൽകൃഷിയെ ബാധിച്ചിട്ടുണ്ടെന്നു തെളിഞ്ഞിട്ടുണ്ട്. “യെല്ലോഡ്വാർഫ്” എന്ന നെൽചെടിയുടെ വൈറസ് രോഗത്തെപ്പറ്റി കേരളത്തിലെ ആദ്യ പഠന റിപ്പോർട്ടാണിത്.

REFERENCE

Raychaudhuri, S. P., Mishra, M. D. and Ghosh, A., Preliminary note on the occurrence and transmission of rice yellow dwarf vims in India. *Pl. Dis. Rept.* 1961, 35, 1040—1041

Rice Research Station,
Pattambi Kerala.

JAMES MATHEW
JOHN ABRAHAM

(M. S. received: 1-2-1977)